

NOTICE OF INTENT

Department of Environmental Quality
Office of Environmental Assessment
Environmental Planning Division

NRC Amendments to Radiation Protection Regulations
(LAC 33:XV.430, 440, 441, 442, 543, 544, 575, 577, 1739, 1755, 2003,
2014, 2017, 2022, 2036, 2051, & Chapter 20, Appendix B) (RP032*)

Under the authority of the Environmental Quality Act, R.S. 30:2001 et seq., and in accordance with the provisions of the Administrative Procedure Act, R.S. 49:950 et seq., the secretary gives notice that rulemaking procedures have been initiated to amend the Radiation Protection regulations, LAC 33:XV.430, 440, 441, 442, 543, 544, 575, 577, 1739, 1755, 2003, 2014, 2017, 2022, 2036, 2051, & Chapter 20, Appendix B (Log #RP032*).

This proposed rule is identical to federal regulations found in 10 CFR 20.1701-03, 34.25, 34.43, 34.47, 34.83, 36.55, 36.81, 39.2, 39.15, 39.35, 39.41, 39.49, 39.53, 39.65, and 39.77, which are applicable in Louisiana. For more information regarding the federal requirement, contact the Regulation Development Section at (225) 765-0399 or Box 4314, Baton Rouge, LA 70821-4314. No fiscal or economic impact will result from the proposed rule; therefore, the rule will be promulgated in accordance with R.S. 49:953(F)(3) and (4).

This rule will bring state regulations into line with existing federal Nuclear Regulatory Commission rules to preserve the state's status as an agreement state. Changes include updating some calibration, inspection, processing, and replacement intervals; changing various references to a more generic term, "personnel dosimeter"; clarifying the responsible office of the department; expanding and detailing the section on Design, Performance, and Certification Criteria for Sealed Sources Used in Downhole Operations; and adding definitions, reporting and notification provisions, safety and health factors, etc. The basis and rationale for this rule are to mirror the federal regulations.

This proposed rule meets an exception listed in R.S. 30:2019(D)(2) and R.S. 49:953(G)(3); therefore, no report regarding environmental/health benefits and social/economic costs is required. This proposed rule has no known impact on family formation, stability, and autonomy as described in R.S. 49:972.

A public hearing will be held on July 25, 2003, at 1:30 p.m. in the Galvez Building, Room C111, 602 N. Fifth Street, Baton Rouge, LA 70802. Interested persons are invited to attend and submit oral comments on the proposed amendments. Should individuals with a disability need an accommodation in order to participate, contact Lynn Wilbanks at the address given below or at (225) 765-0399.

All interested persons are invited to submit written comments on the proposed regulation. Persons commenting should reference this proposed regulation by RP032*. Such comments must be received no later than July 25, 2003, at 4:30 p.m., and should be sent to Lynn Wilbanks, Regulation Development Section, Box 4314, Baton Rouge, LA 70821-4314 or by e-mail to lynnw@ldeq.org. The comment period for this rule ends on the same date as the public hearing. Copies of this proposed regulation can be purchased by contacting the DEQ Records Management Section at (225) 765-0843. Check or money order is required in advance for each copy of RP032*.

This proposed regulation is available for inspection at the following DEQ office locations from 8 a.m. until 4:30 p.m.: 7290 Bluebonnet Boulevard, Fourth Floor, Baton Rouge, LA 70810; 1823 Highway 546, West Monroe, LA 71292; State Office Building, 1525 Fairfield Avenue, Shreveport, LA 71101; 1301 Gadwall Street, Lake Charles, LA 70615; 201 Evans Road, Building 4, Suite 420, New Orleans, LA 70123; 111 New Center Drive, Lafayette, LA 70508; 104 Lococo Drive, Raceland, LA 70394 or on the Internet at <http://www.deq.state.la.us/planning/regs/index.htm>. It is anticipated that the DEQ Headquarters move from 7290 Bluebonnet Boulevard to 602 N. Fifth Street, Baton Rouge, LA, will be completed by mid-July.

James H. Brent, Ph.D.
Assistant Secretary

Title 33

ENVIRONMENTAL QUALITY

Part XV. Radiation Protection

Chapter 4. Standards for Protection Against Radiation

Subchapter C. Surveys and Monitoring

§430. General

A. – B. ...

C. Personnel Dosimeter Processing

1. All personnel dosimeters, except for direct and indirect reading pocket ionization chambers and those dosimeters used to measure the dose to any extremity, that require processing to determine the radiation dose and that are used by licensees and registrants to comply with LAC 33:XV.410, with other applicable provisions of these regulations, or with conditions specified in a license or registration shall be processed and evaluated by a dosimetry processor:

a4. holding current personnel dosimetry accreditation from the National Voluntary Laboratory Accreditation Program (NVLAP) of the National Institute of Standards and Technology; and

b2. approved in this accreditation process for the type of radiation or radiations included in the NVLAP program that most closely approximates the type of radiation or radiations for which the individual wearing the dosimeter is monitored.

2. Dosimetry reports received from the processor must be recorded and maintained indefinitely or until the Office of Environmental Services, Permits Division, terminates the license.

D. ...

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2001 et seq.

HISTORICAL NOTE: Promulgated by the Department of Environmental Quality, Office of Air Quality and Radiation Protection, Radiation Protection Division, LR 19:1421 (November 1993), amended LR 20:653 (June 1994), LR 22:971 (October 1996), amended by the Office of Environmental Assessment, Environmental Planning Division, LR 29:**

Subchapter E. Respiratory Protection and Controls to Restrict Internal Exposure in Restricted Areas

§440. Use of Process or Other Engineering Controls

A. The licensee or registrant shall use, to the extent practicable, process or other engineering controls, such as containment, decontamination, or ventilation, to control the concentrations of radioactive material in air.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2001 et seq.

HISTORICAL NOTE: Promulgated by the Department of Environmental Quality, Nuclear Energy Division, LR 13:569 (October 1987), amended by the Office of Air Quality and Radiation Protection, Radiation Protection Division, LR 19:1421 (November 1993), amended by the Office of Environmental Assessment, Environmental Planning Division, LR 29:**

§441. Use of Other Controls

A. – A.4. ...

B. If the licensee or registrant performs an ALARA analysis to determine whether or not respirators should be used, the licensee or registrant may consider safety factors other than radiological factors. The licensee or registrant should also consider the impact of respirator use on workers' industrial health and safety.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2001 et seq.

HISTORICAL NOTE: Promulgated by the Department of Environmental Quality, Office of Air Quality and Radiation Protection, Radiation Protection Division, LR 19:1421 (November 1993), amended by the Office of Environmental Assessment, Environmental Planning Division, LR 29:**

§442. Use of Individual Respiratory Protection Equipment

A. – A.3.c. ...

d. providing atmosphere-supplying respirators with respirable air of grade D quality or better as defined by the Compressed Gas Association in publication G-7.1, "Commodity Specification for Air," 1997, and included in the regulations of the Occupational Safety and Health Administration (29 CFR 1910.134(i)(1)(ii)(A) through (E)). Grade D quality air criteria include:

i. oxygen content (v/v) of 19.5-23.5%;
 ii. hydrocarbon (condensed) content of 5 milligrams per cubic meter of air or less;

iii. carbon monoxide (CO) content of 10 ppm or less;
 iv. carbon dioxide content of 1,000 ppm or less; and
 v. lack of noticeable odor;

e. fit testing, with fit factor ≥ 10 times the APF for negative pressure devices, and a fit factor ≥ 500 for any positive pressure, continuous flow, and pressure-demand devices, before the first field use of tight fitting, face-sealing respirators and periodically thereafter at a frequency not to exceed one year. Fit testing must be performed with the facepiece operating in the negative pressure mode;

df. written procedures regarding selection, fitting, issuance, maintenance, and testing of respirators, including testing for operability immediately prior to each use; supervision and training of personnel; monitoring, including air sampling and bioassays; and recordkeeping; and

eg. determination by a physician prior to initial fitting of respirators, and at least every 12 months thereafter, that the individual user is physically able to use the respiratory protection equipment;

4.-4.a. ...

b. the routine, nonroutine, and emergency use of respirators;
and

c. ...

d. the availability of standby rescue persons to assist all respirator users and to provide effective emergency rescue if needed; and

e. provision for the availability of standby rescue persons who:

i. are required to be present in situations whenever one-piece atmosphere-supplying suits, or any combination of supplied air respiratory protection device and personnel protective equipment are used from which an unaided individual would have difficulty extricating himself or herself;

ii. must be equipped with respiratory protection devices or other apparatus appropriate for the potential hazards; and

iii. shall observe or otherwise maintain continuous communication with the workers (by visual, voice, signal line, telephone, radio, or other suitable means) and be immediately available to assist them in case of a failure of the air supply or for any other reason that requires relief from distress;

A.5.-B.1. ...

2. the licensee or registrant shall obtain authorization from the ~~department~~Office of Environmental Services, Permits Division, before assigning respiratory protection factors in excess of those specified in Appendix A. The department may authorize a licensee or registrant to use higher protection factors on receipt of an application that:

B.2.a.-D. ...

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2001 et seq.

HISTORICAL NOTE: Promulgated by the Department of Environmental Quality, Nuclear Energy Division, LR 13:569 (October 1987), amended by the Office of Air Quality and Radiation Protection, Radiation Protection Division, LR 19:1421 (November 1993), LR 22:972 (October 1996), amended by the Office of Environmental Assessment, Environmental Planning Division, LR 26:2577 (November 2000), LR 29:**

Chapter 5. Radiation Safety Requirements for Industrial Radiographic Operations

Subchapter A. Equipment Control

§543. Radiation Survey Instruments

A. ...

B. Each radiation survey instrument shall be calibrated:

1. at energies appropriate for use and at intervals not to exceed ~~three~~six months and after each instrument servicing;

B.2.-D. ...

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2001 et seq.

HISTORICAL NOTE: Promulgated by the Department of Environmental Quality, Nuclear Energy Division, LR 13:569 (October 1987), amended by the Office of Air Quality and Radiation Protection, Radiation Protection Division, LR 20:653 (June 1994), LR 23:1138 (September 1997), amended by the Office of Environmental Assessment, Environmental Planning Division, LR 26:2581 (November 2000), LR 27:1233 (August 2001), LR 29:**

§544. Leak Testing, Repair, Tagging, Opening, Modification, Replacement, and Records of Receipt and Transfer of Sealed Sources

A. ...

B. Each sealed source, except an energy compensation source (ECS), shall be tested for leakage at intervals not to exceed six months. In the absence of a certificate from a transferor that a test has been made within the six-month period prior to the transfer, the sealed source shall not be put into use until tested.

C.-G. ...

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2001 et seq.

HISTORICAL NOTE: Promulgated by the Department of Environmental Quality, Nuclear Energy Division, LR 13:569 (October 1987), amended by the Office of Air Quality and Radiation Protection, Radiation Protection Division, LR 20:653 (June 1994), amended by the Office of Environmental Assessment, Environmental Planning Division, LR 26:2582 (November 2000), LR 27:1233 (August 2001), LR 29:**

Subchapter B. Personal Radiation Safety Requirements for Radiographers

§575. Training and Testing

A.-C.2. ...

D. Each licensee or registrant shall conduct a program of internal audits, not to exceed every six months, to ensure that the Radiation Protection Regulations (LAC 33:XV), Louisiana radioactive material license conditions, and the licensee's or registrant's operating and emergency procedures are followed by each radiographer and radiographer trainee. ~~Each radiographer and radiographer trainee shall be audited at quarterly intervals.~~ Records of internal audits shall be maintained for review by the department for two consecutive years from the date of the audit. The internal audit program must include observation of the performance of each radiographer and radiographer trainee during actual industrial radiographic operations at intervals not to exceed six months. In those operations where a single individual serves as both radiographer and RSO, and performs all radiography operations, an internal audit program is not required.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2001 et seq.

HISTORICAL NOTE: Promulgated by the Department of Environmental Quality, Nuclear Energy Division, LR 13:569 (October 1987), amended by the Office of Air Quality and Radiation Protection, Radiation Protection Division, LR 20:653 (June 1994), LR 20:999 (September 1994), LR 23:1138 (September 1997), amended by the Office of Environmental Assessment, Environmental Planning Division, LR 26:2583

(November 2000), LR 27:1235 (August 2001), LR 28:1951 (September 2002), LR 29:34 (January 2003), LR 29:**

§577. Personnel Monitoring Control

A. No licensee or registrant shall permit an individual to act as a radiographer, instructor, or radiographer trainee unless, at all times during radiographic operations, each such individual wears, on the trunk of the body, a direct-reading pocket dosimeter, an alarm ratemeter, and ~~either a film badge, an optically-stimulated luminescence dosimeter (OSL), or a thermoluminescent dosimeter (TLD)~~ a personnel dosimeter that is processed and evaluated by an accredited National Voluntary Laboratory Accreditation Program (NVLAP) processor, except that for permanent radiography facilities where other appropriate alarming or warning devices are in routine use, the wearing of an alarming ratemeter is not required.

B. Pocket dosimeters shall have a range of zero to at least 2 millisieverts (200 millirems) and shall be recharged at least daily or at the start of each shift. Electronic personal dosimeters may only be used in place of ion-chamber pocket dosimeters. Each personnel dosimeter must be assigned to and worn only by one individual. Pocket dosimeters, or electronic personal dosimeters, shall be checked for correct response to radiation at periods not to exceed one year. Acceptable dosimeters shall read within ± 20 percent of the true radiation exposure. Records of positive dosimeter response shall be maintained for three years by the licensee or registrant for department inspection.

C. ~~Each film badge, TLD, or OSL~~ personnel dosimeter shall be processed and evaluated by an accredited NVLAP processor and assigned to and worn by only one individual. ~~Film badges, TLDs, and OSLs~~ Personnel dosimeters must be replaced at periods not to exceed one month. After replacement, ~~each film badge, OSL, or TLD~~ personnel dosimeter must be processed as soon as possible.

D. Direct reading dosimeters, such as electronic personal dosimeters or pocket dosimeters, shall be read and exposures recorded at least daily with use at the beginning and end of each shift, and records must be maintained for three years or until the Office of Environmental Services, Permits Division, authorizes their disposition.

E. If an individual's pocket dosimeter is discharged beyond its range (i.e., goes "off-scale"), or an individual's electronic pocket dosimeter reads greater than 2 millisieverts (200 millirems) and the possibility of radiation exposure cannot be ruled out as the cause, industrial radiographic operations by that individual shall cease and the individual's ~~film badge, OSL, or TLD~~ personnel dosimeter shall be sent for processing immediately. The individual shall not return to work with sources of radiation until a determination of the radiation exposure has been made. This determination must be made by the RSO or the RSO's designee. The results of this determination must be recorded and maintained indefinitely or until the ~~department~~ Office of Environmental Services, Permits Division, authorizes their disposition.

F. Records of the pocket dosimeter readings shall be maintained for inspection by the department for three consecutive years. If the dosimeter readings were used to determine external radiation dose, the records shall be maintained indefinitely or until the ~~department~~ Office of Environmental Services, Permits Division, authorizes their disposition.

G. If a ~~film badge, OSL, or TLD~~ personnel dosimeter is lost or damaged, the worker shall cease work immediately until a replacement ~~film badge, OSL, or TLD~~ personnel dosimeter is provided and the exposure is calculated for the time period from issuance to loss or damage of the ~~film badge, OSL, or TLD~~ personnel dosimeter. The results of the calculated exposure and the time period for which the ~~film badge, OSL, or TLD~~ personnel dosimeter was lost or damaged must be recorded and maintained indefinitely or until the ~~department~~ Office of Environmental Services, Permits Division, authorizes their disposition.

H.-H.3. ...

4. be calibrated at periods not to exceed one year for correct response to radiation: acceptable ratemeters must alarm within ± 20 percent of the true radiation dose rate. Records of calibrations ~~will~~ shall be maintained for three years.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2001 et seq.

HISTORICAL NOTE: Promulgated by the Department of Environmental Quality, Nuclear Energy Division, LR 13:569 (October 1987), amended by the Office of Air Quality and Radiation Protection, Radiation Protection Division, LR 20:653 (June 1994), amended by the Office of Environmental Assessment, Environmental Planning Division, LR 26:2583 (November 2000), LR 27:1235 (August 2001), LR 28:1951 (September 2002), LR 29:35 (January 2003), LR 29:**

Chapter 17. Licensing and Radiation Safety Requirements for Irradiators

§1739. Personnel Monitoring

A. Irradiator operators shall wear either a ~~film badge or a thermoluminescent dosimeter (TLD)~~ personnel dosimeter while operating a panoramic irradiator or while in the area around the pool of an underwater irradiator. The ~~film badge or TLD~~ personnel dosimeter processor shall be accredited by the National Voluntary Laboratory Accreditation Program for high energy photons in the normal and accident dose ranges in accordance with LAC 33:XV.430.C. Each ~~film badge or TLD~~ personnel dosimeter shall be assigned to and worn by only one individual. Film badges shall be processed at least monthly, and ~~TLDs~~ other personnel dosimeters shall be processed at least quarterly.

B. Other individuals who enter the radiation room of a panoramic irradiator shall wear a dosimeter, which may be a pocket dosimeter. For groups of visitors, only two people who enter the radiation room are required to wear dosimeters. If pocket dosimeters are used to meet the requirements of this Subsection, a check of their response to radiation shall be done at least annually. Acceptable dosimeters shall read within ~~± 20~~ ± 30 percent of the true radiation dose.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2001 et seq.

HISTORICAL NOTE: Promulgated by the Department of Environmental Quality, Office of Air Quality and Radiation Protection, Radiation Protection Division, LR 24:2118 (November 1998), amended by the Office of Environmental Assessment, Environmental Planning Division, LR 29:**

§1755. Records and Retention Periods

A.-A.2. ...

3. a copy of the current operating and emergency procedures required by LAC 33:XV.1737 until superseded or the ~~department~~Office of Environmental Services, Permits Division, terminates the license. Records of the radiation safety officer's review and approval of changes in procedures, as required by LAC 33:XV.1737.C.3, shall be retained for three years from the date of the change;

A.4.-B. ...

1. a copy of the license, the license conditions, documents incorporated into the license by reference, and amendments thereto until superseded by new documents or until the ~~department~~Office of Environmental Services, Permits Division, terminates the license for documents not superseded;

2. ~~film badge and TLD results~~personnel dosimeter evaluations required by LAC 33:XV.1739 until the ~~department~~Office of Environmental Services, Permits Division, terminates the license;

3.-5. ...

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2001 et seq.

HISTORICAL NOTE: Promulgated by the Department of Environmental Quality, Office of Air Quality and Radiation Protection, Radiation Protection Division, LR 24:2120 (November 1998), amended by the Office of Environmental Assessment, Environmental Planning Division, LR 26:2604 (November 2000), LR 29:**

Chapter 20. Radiation Safety Requirements for Wireline Service Operations and Subsurface Tracer Studies**§2003. Definitions**

A. The following definitions apply to these terms as used in this Chapter.

Energy Compensation Source (ECS)—a small sealed source, with an activity not exceeding 3.7 MBq (100 microcuries), used within a logging tool, or other tool components, to provide a reference standard to maintain the tool's calibration when in use.

Tritium Neutron Generator Target Source—a tritium source used within a neutron generator tube to produce neutrons for use in well logging applications.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2001 et seq.

HISTORICAL NOTE: Promulgated by the Department of Environmental Quality, Nuclear Energy Division, LR 13:569 (October 1987), repealed and repromulgated by the Office of Air Quality and Radiation Protection, Radiation Protection Division, LR 18:34 (January 1992), amended by the Office of Environmental Assessment, Environmental Planning Division, LR 29:**

§2014. Leak Testing of Sealed Sources

A. ...

B. Method of Testing. Tests for leakage shall be performed only by persons specifically authorized to perform such tests by the ~~department~~Office of Environmental Services, Permits Division, the U.S. Nuclear Regulatory Commission, an agreement state, or a licensing state. The test sample shall be taken from the surface of the source, source holder, or from the surface of the device in which the source is stored or mounted and on which one might expect contamination to accumulate. The test sample shall be analyzed for radioactive contamination, and the analysis shall be capable of detecting the presence of 0.005 microcurie (185 Bq) of radioactive material on the test sample.

C. Interval of Testing:

1. Each sealed source of radioactive material, except an energy compensation source (ECS), shall be tested at intervals not to exceed six months. In the absence of a certificate from a transferor indicating that a test has been made prior to the transfer, the sealed source shall not be put into use until tested. If, for any reason, it is suspected that a sealed source may be leaking, it shall be removed from service immediately and tested for leakage as soon as practical.

2. Each ECS that is not exempt from testing in accordance with Subsection E of this Section must be tested at intervals not to exceed three years. In the absence of a certificate from a transferor that a test has been made within the three years before the transfer, the ECS may not be used until tested.

D. Leaking or Contaminated Source. If the test reveals the presence of 0.005 microcurie (185 Bq) or more of leakage or contamination, the licensee shall immediately withdraw the source from use and shall cause it to be decontaminated, repaired, or disposed of in accordance with these regulations. The licensee shall check the equipment associated with the leaking source for radioactive contamination and, if it is contaminated, have it decontaminated or disposed of in accordance with these regulations. A report describing the equipment involved, the test results, any contamination that resulted from the leaking source, and the corrective action taken shall be filed in writing with the Office of Environmental Compliance within five days of receiving the test results or within 30 days of discovery of a leaking or contaminated source.

E. ...

1. hydrogen-3 (tritium) sources;

2.-4. ...

5. sources of alpha- or neutron-emitting radioactive material with an activity of 10 microcuries (0.370 MBq) or less.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2001 et seq.

HISTORICAL NOTE: Promulgated by the Department of Environmental Quality, Nuclear Energy Division, LR 13:569 (October 1987), repealed and repromulgated by the Office of Air Quality and Radiation Protection, Radiation Protection Division, LR 18:34 (January 1992), amended by the Office of Environmental Assessment, Environmental Planning Division, LR 26:2604 (November 2000), LR 29:**

§2017. Design, Performance, and Certification Criteria for Sealed Sources Used in Downhole Operations

A. Each sealed source, except those containing radioactive material in gaseous form, used in downhole operations and manufactured after October 20, 1988, shall be certified by the manufacturer, or other testing organization acceptable to the departmentOffice of Environmental Services, Permits Division, to meet the following minimum criteria:

A.1.-B. ...

C. Each sealed source, except those containing radioactive material in gaseous form, used in downhole operations after October 20, 1988, shall be certified by the manufacturer, or other testing organization acceptable to the departmentOffice of Environmental Services, Permits Division, as meeting the sealed source performance requirements for oil well-logging as contained in the American National Standard N542, "Sealed Radioactive Sources, Classification," in effect on October 20, 1987.

D. Certification documents shall be kept and maintained for inspection by the departmentOffice of Environmental Services, Permits Division, for a period of two years after source disposal. If the source is abandoned downhole, the certification documents shall be maintained until the departmentOffice of Environmental Services, Permits Division, authorizes disposition in writing.

E. Sealed Source Used in Well-Logging Applications

1. A licensee may use a sealed source in well-logging applications if the sealed source:

- a. is doubly encapsulated;
- b. contains licensed material whose chemical and physical forms are as insoluble and nondispersible as practical; and
- c. meets the following requirements:
 - i. for a sealed source manufactured on or before July 14, 1989, the requirements of USASI N5.10-1968, "Classification of Sealed Radioactive Sources," or the requirements in Subsection C or D of this Section; or
 - ii. for a sealed source manufactured after July 14, 1989, the oil well-logging requirements of ANSI/HPS N43.6-1997, "Sealed Radioactive Sources—Classification"; or
 - iii. for a sealed source manufactured after July 14, 1989, the sealed source's prototype has been tested and found to maintain its integrity after each of the following tests:

(a). Temperature. The test source must be held at -40 °C for 20 minutes, 600 °C for 1 hour, and then be subjected to a thermal shock test with a temperature drop from 600 °C to 20 °C within 15 seconds.

(b). Impact Test. A 5 kg steel hammer, 2.5 cm in diameter, must be dropped from a height of 1 m onto the test source.

(c). Vibration Test. The test source must be subjected to a vibration from 25 Hz to 500 Hz at 5 g amplitude for 30 minutes.

(d). Puncture Test. A 1 gram hammer and pin, 0.3 cm pin diameter, must be dropped from a height of 1 m onto the test source.

(e). Pressure Test. The test source must be subjected to an external pressure of 1.695×10^7 pascals (24,600 pounds per square inch absolute).

2. The requirements in Subparagraphs E.1.a-c of this Section do not apply to sealed sources that contain licensed material in gaseous form.

3. The requirements in Subparagraphs E.1.a-c of this Section do not apply to energy compensation sources (ECSs). ECSs must be registered with the Office of Environmental Services, Permits Division.

F. Energy Compensation Source. The licensee may use an energy compensation source (ECS) that is contained within a logging tool, or other tool components, only if the ECS contains quantities of licensed material not exceeding 3.7 MBq (100 microcuries).

1. For well-logging applications with a surface casing for protecting fresh water aquifers, use of the ECS is only subject to the requirements of LAC 33:XV.2014, 2015, and 2016.

2. For well-logging applications without a surface casing for protecting fresh water aquifers, use of the ECS is only subject to the requirements of Subsections E and H of this Section and LAC 33:XV.2014, 2015, 2016, and 2051.

G. Tritium Neutron Generator Target Source

1. Use of a tritium neutron generator target source, containing quantities not exceeding 1,110 MBq (30 curies) and in a well with a surface casing to protect fresh water aquifers, is subject to the requirements of these regulations except Subsections E and F of this Section and LAC 33:XV.2051.

2. Use of a tritium neutron generator target source, containing quantities exceeding 1,110 MBq (30 curies) or in a well without a surface casing to protect fresh water aquifers, is subject to the requirements of these regulations except Subsections E and F of this Section.

H. Use of a Sealed Source in a Well Without a Surface Casing. The licensee may use a sealed source in a well without a surface casing for protecting fresh water aquifers only if the licensee follows a procedure for reducing the probability of the source becoming lodged in the well. The procedure must be approved by the Office of Environmental Services, Permits Division.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2001 et seq.

HISTORICAL NOTE: Promulgated by the Department of Environmental Quality, Nuclear Energy Division, LR 13:569 (October 1987), repealed and repromulgated by the Office of Air Quality and Radiation Protection, Radiation Protection Division, LR 18:34 (January 1992), amended by the Office of Environmental Assessment, Environmental Planning Division, LR 26:2605 (November 2000), LR 29:**

Subchapter A. Requirements for Personnel Safety

§2022. Personnel Monitoring

A. No licensee or registrant shall permit any individual to act as a logging supervisor or to assist in the handling of sources of radiation unless each such individual wears either a film badge or a thermoluminescent dosimeter (TLD)a

personnel dosimeter. Each film badge or TLD personnel dosimeter shall be assigned to and worn by only one individual. Film badges must be replaced at least monthly, and TLDs replaced other personnel dosimeters shall be processed at least quarterly. After replacement, each film badge or TLD personnel dosimeter must be promptly processed. The processor of a personnel dosimeter shall be accredited by the National Voluntary Laboratory Accreditation Program.

B. Personnel monitoring records shall be maintained for inspection until the ~~department~~Office of Environmental Services, Permits Division, authorizes disposition.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2001 et seq.

HISTORICAL NOTE: Promulgated by the Department of Environmental Quality, Nuclear Energy Division, LR 13:569 (October 1987), repealed and repromulgated by the Office of Air Quality and Radiation Protection, Radiation Protection Division, LR 18:34 (January 1992), amended by the Office of Environmental Assessment, Environmental Planning Division, LR 26:2605 (November 2000), LR 29:**

Subchapter B. Precautionary Procedures in Logging and Subsurface Tracer Operations

§2036. Uranium Sinker Bars

A. The licensee may use a uranium sinker bar in well-logging applications only if it is legibly impressed with the words "CAUTION—RADIOACTIVE DEPLETED URANIUM" and "NOTIFY CIVIL AUTHORITIES [or COMPANY NAME] IF FOUND."

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2001 et seq.

HISTORICAL NOTE: Promulgated by the Department of Environmental Quality, Office of Environmental Assessment, Environmental Planning Division, LR 29:**

Subchapter D. Notification

§2051. Notification of Incidents, Abandonment, and Lost Sources

A.-B.1. ...

2. notify the Office of Environmental Compliance immediately by telephone at (225) 765-0160 if radioactive contamination is detected at the surface or if the source appears to be damaged and provide a follow-up written report to the ~~department~~office within 30 days of detection.

C.-C.3.g. ...

h. information contained on the permanent identification plaque; and

i. the names of state agencies receiving a copy of this report; and

j. the immediate threat to public health and safety justification for implementing abandonment if prior Office of Environmental Compliance approval was not obtained because the licensee believed there was an immediate threat to public health and safety.

D. Whenever a sealed source containing radioactive material is abandoned downhole, the licensee shall provide a means to prevent inadvertent intrusion on the source, unless the source is not accessible to any subsequent drilling operations, and a permanent plaque (see Appendix B of this Chapter) for posting the well or well-bore. This plaque shall:

1.-2.c. ...

~~d. the well name and well identification number or other designation;~~

de. the well name and well identification number(s) or other designation;

ef. the sealed source(s) by radionuclide and quantity of activity;

fg. the source depth and the depth to the top of the plug; and

gh. an appropriate warning, depending on the specific

circumstances of each abandonment. Appropriate warnings may include "DO NOT DRILL BELOW PLUG BACK DEPTH"; "DO NOT ENLARGE CASING"; or "DO NOT RE-ENTER THE HOLE," followed by the words, "BEFORE CONTACTING THE OFFICE OF ENVIRONMENTAL COMPLIANCE, LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY."



E. The licensee shall notify the ~~department~~Office of Environmental Compliance of the theft or loss of radioactive materials, radiation overexposure, excessive levels and concentrations of radiation or radioactive materials, and certain other accidents as required by LAC 33:XV.341, 485, 486, and 487.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2001 et seq.

HISTORICAL NOTE: Promulgated by the Department of Environmental Quality, Nuclear Energy Division, LR 13:569 (October 1987), repealed and repromulgated by the Office of Air Quality and Radiation Protection, Radiation Protection Division, LR 18:34 (January 1992), amended LR 21:555 (June 1995), amended by the Office of Environmental Assessment, Environmental Planning Division, LR 26:2606 (November 2000), LR:29**

Appendix B

Example of Plaque for Identifying Wells Containing Sealed Sources of Radioactive Material Abandoned Downhole

[COMPANY NAME]	
[WELL IDENTIFICATION]	
	CAUTION
	
ONE 2 CURIE CS-137 RADIOACTIVE SOURCE ABANDONED 3-3-75 AT 8400 FT. PLUG BACK DEPTH 8200 FT. DO NOT RE-ENTER THIS WELL BEFORE CONTACTING	
LOUISIANA RADIATION PROTECTION DIVISION OFFICE OF ENVIRONMENTAL COMPLIANCE <u>LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY</u>	

~~[EDITOR'S NOTE: The text "Louisiana Radiation Protection Division" should be deleted from the above plaque graphic.]~~

The size of the plaque should be convenient for use on active or inactive wells, e.g., a 7-inch square that is 3 mm (1/8-inch) thick. Letter size of the word "CAUTION" should be approximately twice the letter size of the rest of the information, e.g., 1/2-inch and 1/4-inch letter sizes, respectively.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2001 et seq.

HISTORICAL NOTE: Promulgated by the Department of Environmental Quality, Nuclear Energy Division, LR 13:569 (October 1987), repealed and repromulgated by the Office of Air Quality and Radiation Protection, Radiation Protection Division, LR 18:34 (January 1992), amended by the Office of Environmental Assessment, Environmental Planning Division, LR 26:2606 (November 2000), LR 29:**